

**WHAT IS CLAIMED IS:**

1. A hinge device of a portable wireless terminal which includes a first housing and a second housing, the terminal having a first hinge axis extending parallel to an upper surface of the first housing, the second housing being coupled to the first housing in such a manner that the second housing is moveable towards and away from the first housing about the first hinge axis, the terminal further having a second hinge axis extending perpendicular to the upper surface of the first housing, the second hinge axis providing a rotational center for the first hinge axis, the first and second hinge axes acting as rotational axes of the second housing when the second housing rotates with respect to the first housing, the hinge device comprising:

a first hinge module including a first hinge base fixedly coupled to the first housing, and a second hinge base rotatably coupled to the first hinge base in opposition to the first hinge base so as to be rotated about the second hinge axis; and

a second hinge module fixed to the second housing and connecting the second housing to the second hinge base in order to allow the second housing to rotate about the first hinge axis.

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2. The hinge device as claimed in claim 1, wherein the second hinge module includes a module housing fixed in the second housing, a hinge shaft accommodated in the module housing so as to rotate about the first hinge axis and having a hinge protrusion protruding towards a side of the module housing so as to be connected to the second hinge base, and a stopper block accommodated in the module housing in order to press against one side of the hinge shaft by receiving predetermined elastic force.

3. The hinge device as claimed in claim 2, wherein the hinge shaft is formed at an outer peripheral surface thereof with at least two stopper slots and the stopper block is provided with a stopper protrusion, which is selectively inserted  
5 into the stopper slot as the hinge shaft rotates.

4. The hinge device as claimed in claim 1, wherein the first hinge base has a cylindrical shape extending in a second hinge axis direction and is formed at a center thereof with a first perforation hole extending in the second hinge axis  
10 direction, the second hinge base having a cylindrical shape extending in the second hinge axis direction and is formed at a center thereof with a second and third perforation holes, and the first hinge module includes hinge coupler having a flange supported on an upper end of the second hinge base and a supporting shaft protruding from the flange and extending to a lower end of the first hinge base by  
15 passing through the first to third perforation holes, and a snap ring coupled with a coupling slot of the supporting shaft at the lower end of the first hinge base.

5. The hinge device as claimed in claim 4, wherein the flange is integrally formed with the second hinge base.  
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6. The hinge device as claimed in claim 4, wherein the hinge coupler includes a guide hole extending in the second hinge axis direction and formed through a center of the supporting shaft.

25 7. The hinge device as claimed in claim 1, further comprising at least one spring hole formed on an upper circumferential portion of the first hinge base at a same angular interval, at least one ball exposed at an upper end of the spring hole

by receiving elastic force from a compression spring accommodated in the spring hole, and at least one slot formed at an inner upper end of the second hinge base along a circumferential surface of the second hinge base at a same angular interval so as to selectively engage with the ball.

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8. The hinge device as claimed in claim 7, wherein a sliding groove is formed at an upper inner portion of the second hinge base along a rotating route of the ball.

10 9. The hinge device as claimed in claim 1, further comprising at least one spring hole formed on an lower circumferential portion of the second hinge base at a same angular interval, at least one ball exposed at an upper end of the spring hole by receiving elastic force from a compression spring accommodated in the spring hole, and at least one slot formed at an inner lower end of the first hinge base  
15 along a circumferential surface of the first hinge base at a same angular interval so as to selectively engage with the ball.

10. The hinge device as claimed in claim 1, wherein the first hinge module includes a cylindrical rotary hinge housing fixed to an inner portion of the  
20 second hinge base, and the second hinge module is connected to the second hinge base through the cylindrical rotary hinge housing.

11. The hinge device as claimed in claim 1, further comprising a receiving groove formed on an upper end of the second hinge base, a camera lens  
25 accommodated in a lower portion of the receiving groove, a switch pad accommodated in the receiving groove above the camera lens, formed at a center thereof with a first opening for exposing the camera lens, and having at least one

pair of dome switches, which are symmetrically aligned to each other, and a key button installed at an upper end of the receiving groove in order to operate the dome switches and formed with a second opening for exposing the camera lens.

5           12. The hinge device as claimed in claim 11, wherein the first hinge module includes a cylindrical rotary hinge housing, the cylindrical rotary hinge housing exposes the key pad to an upper surface of the cylindrical rotary hinge housing, and the second hinge base is fixed to an inner portion of the cylindrical rotary hinge housing.

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          13. The hinge device as claimed in claim 1, wherein the first hinge base includes a fixing plate fixed to the first housing and a base plate fixed to the fixing plate and having a resting surface facing a lower end of the second hinge base.

15           14. The hinge device as claimed in claim 13, wherein a first perforation hole is formed through the fixing plate and the base plate of the first hinge base, the second hinge base has a cylindrical shape extending in the second hinge axis direction and is formed at a center thereof with a second perforation hole coaxially aligned with the first perforation hole in the second hinge axis direction, and the first  
20 hinge module includes a hinge coupler having a flange supported on an upper end of the second hinge base and a supporting shaft protruding from the flange, extending between the fixing plate and the base plate and having a coupling slot along an outer circumferential portion thereof, and a snap ring coupled with the coupling slot of the supporting shaft at a lower end of the base plate.

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          15. The hinge device as claimed in claim 13, further comprising at least one spring hole formed on an lower circumferential portion of the second hinge base

at a same angular interval, at least one ball exposed at an upper end of the spring hole by receiving elastic force from a compression spring accommodated in the spring hole, and at least one slot formed at the resting surface of the base plate along a circumferential portion of the resting surface at a same angular interval so as to  
5 selectively engage with the ball.

16. The hinge device as claimed in claim 13, further comprising a recess formed at a lower end of the second hinge base in order to rotatably receive the base plate, a first protrusion protruding from an outer peripheral portion of the  
10 base plate, and a second protrusion formed at a sidewall of the recess so as to engage with the first protrusion when the second hinge base rotates, thereby limiting a rotational range of the second hinge base.

17. The hinge device as claimed in claim 13, wherein the second hinge  
15 base is formed at an outer peripheral portion thereof with a coupling hole, which acts as a coupling means with respect to the second hinge module.